Application No. 10/001,573
Paper Dated January 6, 2005
Attorney Docket No. 128346.31801

AMENDMENTS TO THE CLAIMS

1. (Twice Amended) A method for improving the toughness of a CBN product made by a high temperature/high pressure (HP/HT) process, which comprises the steps of:

forming a blend of an oxygen getter and CBN product-forming feedstock, ~~wherein the oxygen getter is selected from the group consisting of titanium, aluminum, silicon and mixtures thereof~~; and

subjecting said blend to a CBN high temperature/high pressure (HP/HT) process for forming a CBN product, wherein said HP/HT process is conducted in the presence of a catalyst;

wherein the amount of oxygen getter in said blend is sufficient to improve the toughness of said CBN product; and

wherein the oxygen getter comprises at least one of elemental titanium, aluminum, and silicon in an amount equal to or less than 0.24 weight-% of the blend ~~the amount of oxygen getter in the blend is between about 0.005 and 0.5 wt %; and~~

~~wherein the CBN product has an oxygen content of less than about 300 ppm~~.

2. (Currently Presented) The method of claim 1, wherein said oxygen getter further comprises ~~a~~ at least one material selected from the group consisting of ~~elemental Al, Si, and Ti,~~ nitrides of Al, Si, and Ti, carbides of Al, Si, and Ti, and mixtures thereof~~.~~

3-8. (Previously Cancelled)

9. (Previously Presented) The method of claim 1, wherein said HP/HT process is conducted in the presence of a catalyst devoid of oxygen content.

10. (Previously Cancelled)

11. (Original) The method of claim 1, wherein said oxygen getter is removed from said CBN product.

12-14. (Previously Cancelled)

15. (Previously Amended) A CBN product formed by the process of claim 1.

16–22. (Previously Cancelled)

23. (Twice Amended) A method for improving the toughness of a CBN product made by a high temperature/high pressure (HP/HT) process, which comprises the steps of:

forming a blend of an oxygen getter and a CBN product-forming feedstock, wherein the oxygen getter comprises ~~titanium~~ at least one material selected from the group consisting of nitrides of Al, Si, and Ti, carbides of Al, Si, and Ti, and mixtures thereof; and

subjecting said blend to a CBN high temperature/high pressure (HP/HT) process for forming a CBN product, wherein said HP/HT process is conducted in the presence of a catalyst; and

wherein the amount of oxygen getter in said blend is sufficient to improve the toughness of said CBN product ~~and wherein the amount of oxygen getter in the blend is between about 0.005 and 0.5 wt %; and~~

~~wherein the CBN product has an oxygen content of less than about 300 ppm.~~

24-25. (Previously Cancelled)

26. (Twice amended) The method of claim 23, wherein the oxygen getter comprises between about 0.005 and 0.5 weight-% of the blend ~~the titanium is selected from elemental titanium, nitrides of titanium, carbides of titanium, and mixtures thereof.~~

27. (Previously Cancelled)

28. (Previously Presented) The method of claim 23, wherein the HP/HT process is conducted in the presence of a catalyst devoid of oxygen content.

29. (New) The method of claim 2, wherein the oxygen getter comprises between about 0.005 and 0.5 weight-% of the blend.

30. (New) The method of claim 1, wherein the method yields a CBN product having an oxygen content of less than about 300 ppm.

31. (New) The product of claim 15, wherein the product has an oxygen content of less than about 300 ppm.

32. (New) The method of claim 23, wherein the CBN product has an oxygen content of less than about 300 ppm.

33. (New) The method of claim 23, wherein the oxygen getter further comprises at least one of elemental titanium, aluminum, and silicon.

34. (New) The method of claim 23, wherein the portion of titanium, aluminum, and silicon in the oxygen getter comprises up to 0.24 weight-% of the blend.

35. (New) A CBN product formed by the method of claim 23, wherein the CBN product has an oxygen content of less than about 300 ppm.

36. (New) A method for improving the toughness of a CBN product made by a high temperature/high pressure (HP/HT) process, which comprises the steps of:

forming a blend of an oxygen getter and a CBN product-forming feedstock, wherein the oxygen getter comprises at least one material selected from the group consisting of nitrides of Al, Si, and Ti, carbides of Al, Si, and Ti, and mixtures thereof; and

subjecting said blend to a CBN high temperature/high pressure (HP/HT) process for forming a CBN product, wherein said HP/HT process is conducted in the presence of a catalyst;

wherein the oxygen getter comprises between about 0.005 and 0.5 weight-% of the blend.

37. (New) The method of claim 36 wherein the method yields a CBN product having an oxygen content of less than about 300 ppm.

38. (New) The method of claim 36, wherein the oxygen getter further comprises at least one of elemental titanium, aluminum, and silicon.

39. (New) The method of claim 38, wherein the at least one of elemental titanium, aluminum and silicon comprises up to 0.24 weight-% of the blend.

40. (New) The method of claim 36 wherein the portion of titanium, aluminum, and silicon in the oxygen getter comprises up to 0.24 weight-% of the blend

41. (New) A CBN product formed by the method of claim 36, wherein the CBN product has an oxygen content of less than about 300 ppm.